

# Rhodora

JOURNAL OF THE  
NEW ENGLAND BOTANICAL CLUB.

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Conducted and published for the Club, by

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Vol. 21.

November, 1919.

No. 251.

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Boston, Mass.  
1052 Exchange Building.

||| Providence, R. I.  
Preston and Rounds Co.

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Subscriptions, advertisements, and business communications to

W. P. RICH, 300 Massachusetts Avenue, Boston, Mass.

Single copies may be had from

E. L. RAND, Corresponding Sec'y N. E. Botanical Club,

1052 Exchange Building, Boston, Mass.

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## LOMATOGONIUM THE CORRECT NAME FOR PLEUROGYNE.

M. L. FERNALD.

THE name *Pleurogyne* has become so fixed in the literature of northern and alpine floras that it is disconcerting to discover that it is clearly antedated by *Lomatogonium*. There is, however, a degree of satisfaction in the fact that, while the generic name *Pleurogyne* had a very irregular genesis, *Lomatogonium* was carefully and properly published as a genus. Briefly, the situation is as follows. In 1826, Chamisso & Schlechtendal, in enumerating the species of *Gentiana* collected by the Romanzoff expedition, divided that genus into four sections, indicated respectively by 1, 2, 3 and 4 asterisks. The fourth section was

“\*\*\*\* *Corolla rotata 4-5 fida, faux breviter fimbriata, stigmata duo utrinque longitudinaliter ovario adnata (suturae valvularum s. spermophoro insidentia).* Genus *Pleurogyna* Eschsch. in litt.”<sup>1</sup>

Then follow the species: *Gentiana rotata*, based upon *Swertia rotata* L.; *Gentiana Stelleriana*, based upon Steller material from eastern Asia and upon the *Swertia rotata* of Pallas, not of Linnaeus; and *Gentiana carinthiaca*, based upon *Swertia carinthiaca* Wulfen.

In 1830, Alexander Braun, in an article entitled “*Lomatogonium; ein neues Genus für Gentiana carinthiaca Froehl.*,”<sup>2</sup> formally established the genus *Lomatogonium*, clearly differentiating it from both *Gentiana* and *Swertia*; and in the next year, 1831, Reichenbach took up *Lomato-*

<sup>1</sup> Cham. & Schl. *Linnaea*, i. 187 (1826).

<sup>2</sup> A. Br. *Flora*, xiii. 221 (1830).

*gonium* and made the combination, *L. carinthiacum*,<sup>1</sup> In 1836, however, Grisebach, in his preliminary publication upon the *Gentianaceae*, instead of adopting the properly published *Lomatogonium*, took up for the genus the Eschscholtz name but modified to *Pleurogyne*,<sup>2</sup> ascribing it to Eschscholtz and citing *Lomatogonium* as a synonym; and this name was later used by Grisebach in his more extended work.<sup>3</sup> And, although the original form of the name, *Pleurogyna*, was preferred by George Don<sup>4</sup> and has been adopted in *Index Kewensis*, the name *Pleurogyne* has been in general use up to the present time. In the same year, 1836, that Grisebach formally put forward *Pleurogyne* as a genus, Rafinesque published *Narketis*,<sup>5</sup> based upon *Swertia rotata*, *Gentiana carinthiaca*, etc. But, since *Pleurogyna* was published by Chamisso & Schlechtendal only as a synonym for a section of *Gentiana* and consequently, as Professor Briquet says in a letter to the present writer, "must be considered as a *genus non rite publicatum*," and since neither *Pleurogyne* nor *Narketis* were published as generic names until 1836, it should be clear that the first properly published name for the genus is *Lomatogonium* A. Br. (1830).

The correct bibliography of the genus seems to be, then

LOMATOGONIUM A. Br. Flora, xiii. 221 (1830); Reichenb. Fl. Germ. Excurs. 421 (1831); Kostel. All. Med.-Pharm. Fl. iii. 1047 (1834).

*Pleurogyna* Eschsch., published as a synonym for a section of *Gentiana* and ascribed to Eschscholtz by Chamisso & Schlechtendal, Linnaea, i. 187 (1826); first taken up as a genus by G. Don, Gen. Syst. iv. 188 (1837).

*Pleurogyne* Eschsch. ex Griseb. Observ. Gent. 31 (1836) and Gen. et Sp. Gent. 309 (1839).

*Narketis* Raf. Fl. Tell. iii. 26 (1836).

In North America there is a single polymorphous, boreal species, *Lomatogonium rotatum* (L.) Fries, the synonymy of which follows.

LOMATOGONIUM ROTATUM (L.) Fries ex Nyman, Consp. Fl. Eur. iii. 500 (1881). *Swertia rotata* L. Sp. Pl. i. 226 (1753). *S. sulcata* Rottb. Act. Hafn. x. 438, t. 1, fig. 4 (1770). *Gentiana rotata* (L.) Froel. Gent. 105 (1796). *G. sulcata* (Rottb.) Willd. Sp. Pl. i. 1351 (1798).

<sup>1</sup> Reichenb. Fl. Germ. Excurs. 421 (1831).

<sup>2</sup> Griseb. Observ. Gent. 31 (1836).

<sup>3</sup> Griseb. Gen. et Sp. Cent. 309 (1839).

<sup>4</sup> G. Don, Gen. Syst. iv. 188 (1837).

<sup>5</sup> Raf. Fl. Tell. iii. 26 (1836).

*S. pusilla* Pursh, Fl. Am. Sept. i. 101 (1814). *L. sulcatum* (Rottb.) Reichenb. ex Kostel. All. Med.-Pharm. Fl. iii. 1048 (1834). *Narketis rotata* (L.) Raf. Fl. Tell. iii. 26 (1836). *N. hyperborea* Raf. I. c. (1836). *Pleurogyna sulcata* (Rottb.) G. Don, Gen. Syst. iv. 188 (1837). *Pleurogyne rotata* (L.) Griseb. Gen. et Sp. Gent. 309 (1839). *P. Purshii* Steud. Nom. ed. 2, ii. 355 (1841). *P. carinthiaca*, var. *pusilla* (Pursh) Gray, Syn. Fl. N. A. ii. pt. 1, 124 (1878). *P. fontana* A. Nels. Proc. Biol. Soc. Wash. xvii. 177 (1904).

The plant of eastern America,—southwestern Greenland, southern Labrador, Newfoundland and eastern Quebec<sup>1</sup>—is extremely variable. Some individuals beautifully match Gmelin's plate<sup>2</sup> of the Siberian plant originally taken up by Linnaeus as *Swertia rotata*, a plant with lance-attenuate leaves and calyx-segments. Others, the majority, have the blunter, more oblong-lanceolate leaves of *Pleurogyne rotata*, var. *americana* Griseb.,<sup>3</sup> while more extreme individuals have the leaves and sometimes the calyx-segments oval and quite obtuse. These extremes, often occurring in the same colonies and connected by abundant transitional specimens, are not varietally distinct but at most can be recognized merely as somewhat striking forms.

Neither does it seem possible to distinguish clearly *Pleurogyne rotata*, var. *tenuifolia* Griseb.,<sup>4</sup> which is apparently identical with *P. fontana* A. Nelson.<sup>5</sup> The latter plant is usually taller and more fastigiate than the maritime individuals and it has more slender leaves and calyx-segments. Nelson argues, furthermore, that it cannot be *P. rotata* because "That species seems to skirt the northern boundary of the continent, from Labrador and Greenland to Alaska," while "*P. fontana* seems to be closely circumscribed, being probably confined to north central Colorado and the adjacent border of Wyoming." He further says that "the most obvious difference is the different arrangement of the leaves; *P. fontana* being relatively naked below while in *P. rotata* the leaves are crowded or even rosulate at base."

Now, looking into these characters in the order of their importance, we find that of 42 individuals seen from Colorado and Wyoming 14

<sup>1</sup> Pursh's *Swertia pusilla* was said by him to come from "the alpine regions of the White-hills of New Hampshire . . . In the Banksian Museum are specimens from Labrador, in every respect agreeing with the New Hampshire plant." But no material of Pursh's plant from New Hampshire is known nor is it probable that the plant occurs southwest of the lower St. Lawrence. There it is confined to brackish sands or springy borders of saline marshes.

<sup>2</sup> Gmel. Fl. Sib. iv. t. lxxi, fig. 1 (1769).

<sup>3</sup> Griseb. Gen. et Sp. Gent. 309 (1839).

<sup>4</sup> Griseb. I. c. (1839).

<sup>5</sup> A. Nelson, Proc. Biol. Soc. Wash. xvii. 177 (1904).

show rosulate basal leaves, while of the 210 individuals in the Gray Herbarium from Scandinavia, Siberia, Alaska, and from Greenland to Newfoundland and the Magdalen Islands fully one-third lack such rosulate foliage; and, incidentally, the Gmelin plate shows the original Siberian material naked at base. Although, as already stated, the plant of Colorado and Wyoming, as well as of Alberta and Manitoba, is inclined to be taller and more fastigiate and to have more slender leaves and calyx-segments than most other material, it would be most difficult to distinguish plants from Como, Colorado (coll. *Hughes*) with lanceolate leaves from Gmelin's plate or from many specimens from Labrador, Anticosti or Gaspé, while the more extreme Rocky Mountain plant is well matched by a specimen sent out by Besser from Irkutsk on the Angara River entering Lake Baikal in Siberia. The occurrence of this extreme form with linear leaves near the mouth of Angara River is significant, since Gmelin, who illustrated a broader-leaved individual, said of the original collection of *P. rotata* "Planta haec in palustribus ad ANGARAE fluvii ostium in lacum Baical et deinceps *Bargusini* occurrents" (Gmel. l. c. 112). In other words, *P. fontana*, although the more general form in the Rocky Mountains, is also found in the type-region of *P. rotata*. The anthers of many Colorado specimens are longer than those of many maritime or more boreal plants, but some Colorado plants show small anthers; and some plants from about the Gulf of St. Lawrence, differing in no other character from the plants with small anthers, have anthers quite as long as in the more extreme Rocky Mountain individuals. The writer is, therefore, unable to keep apart even varietally the Rocky Mountain plant.

Nelson (and others before him), in supposing *Pleurogyne rotata* (or *Lomatogonium rotatum*) "to skirt the northern boundary of the continent, from Labrador and Greenland to Alaska," makes a considerable assumption. Outside Colorado and adjacent Wyoming the species is definitely known in America from southwestern Greenland, southeastern Labrador, Newfoundland and eastern Quebec (south to the Magdalen Islands); on the southwest shores of Hudson Bay in Keewatin, thence locally across Manitoba and Saskatchewan to Alberta, and somewhere on the Mackenzie; and from southern and western Alaska into Siberia. In other words, we have no definite knowledge that *L. rotatum* skirts "the northern boundary of the continent from Labrador...to Alaska," for east of an indefinite station on the Mac-

kenzie, its northernmost stations seem to be Hopedale, Labrador (lat.  $55^{\circ} 27'$ ), Churchill, Keewatin (lat.  $58^{\circ} 40'$ ) and Edmonton Alberta (lat.  $53^{\circ} 30'$ ).

The forms of *Lomatogonium rotatum* may be designated as follows.

**LOMATOGONIUM ROTATUM** (L.) Fries, forma **typicum**. *Swertia rotata* L. Sp. Pl. i. 226 (1753).—Leaves and calyx-segments lanceolate or lance-linear, acuminate.

**L. ROTATUM**, forma **americanum** (Griseb.), n. comb. *Pleurogyne rotata*,  $\gamma$  *americana* Griseb. Gen. et Sp. Gent. 309 (1839).—Leaves and calyx-segments oblong or oblong-lanceolate, bluntish.

**L. ROTATUM**, forma **ovalifolium**, n. f., foliis laciniis calycisque ovalibus vel ovato-oblongis obtusis. TYPE from MAGDALEN ISLANDS: grassy bank near shore, Amherst Island, August 25, 1914, St. John, no. 1970 (herb. Gray).

**L. ROTATUM**, forma **tenuifolium** (Griseb.), n. comb. *Pleurogyne rotata*,  $\beta$ . *tenuifolia* Griseb. l. c. (1839). *P. fontana* A. Nelson, Proc. Biol. Soc. Wash. xvii. 177 (1904).—Leaves and calyx-segments linear-attenuate.

Many species have been described, chiefly from Asia, while only one species besides *L. rotatum* is known in Europe and a single species on Madagascar. Several of the proposed Asiatic species seem to be minor variants rather than true species and some, naturally, are now considered quite inseparable from earlier-described species. So far as the writer has been able to recognize the species they are as follows; but fuller material will doubtless show that several recently proposed species with which he is unfamiliar are to be recognized.

**LOMATOGONIUM ROTATUM** (L.) Fries. See above.

**L. CARINTHIACUM** (Wulf.) Reichenb. Fl. Germ. Excurs. 421 (1831). *Swertia carinthiaca* Wulfen in Jacq. Misc. ii. 53, t. 6 (1781).—The TYPE of *Lomatogonium*, but the specific combination not definitely made by A. Braun.

**L. CARINTHIACUM** (Wulf.) Reichenb., var. **Stellerianum** (Cham. & Schl.), n. comb. *Gentiana Stelleriana* Cham. & Schl. Linnaea, i. 188 (1826). *Pleurogyne himalayensis* Klotsch in Klotsch & Garcke, Bot. Ergeb. Waldem. Reise, 91, t. 68 (1862).

**L. Forresti** (Balf. f.), n. comb. *Pleurogyne Forresti* Balf. f. Notes Roy. Bot. Gard. Edinb. no. xvii. 78, t. 18 (1907).

**L. brachyantherum** (C. B. Clarke), n. comb. *Pleurogyne brachyanthera* C. B. Clarke in Hook. f. Fl. Brit. Ind. iv. 120 (1885).

**L. Thomsoni** (C. B. Clarke), n. comb. *Pleurogyne Thomsoni* C. B. Clarke in Hook. f. Fl. Brit. Ind. iv. 120 (1885).

**L. macranthum** (Diels & Gilg), n. comb. *Pleurogyne macrantha* Diels & Gilg in Futterer, Durch Asien, Bot. Repr. 17, t. 2 (1903).

L. **spathulatum** (Kerner), n. comb. *Pleurogyne spathulata* Kerner, Ber. Naturw. Ver. Innsbruck, i. 104 (1870).

L. **diffusum** (Maxim.), n. comb. *Pleurogyne diffusa* Maxim. Bull. Acad. Pétersb. xxxii. 510 (1888).

L. **Lubahnianum** (Vatke), n. comb. *Pleurogyne Lubahniana* Vatke, Bremen, Abh. ix. 127 (1885).

L. **minus** (Griseb.), n. comb. *Ophelia minor* Griseb. in DC. Prodr. ix. 126 (1845).

GRAY HERBARIUM.

## AN EXCURSION TO MT. WASHINGTON, MASSACHUSETTS, AND BASH-BISH FALLS.

CLARENCE H. KNOWLTON.

WHEN the New England Botanical Club made its 1919 spring excursion to southern Berkshire County, Mr. Charles Schweinfurth and I received as our first day's assignment the southwestern corner of the County and State, the township of Mt. Washington, especially the region of Hudson River drainage. We found about 200 species in identifiable condition, and collected them for the Club Herbarium. My partner selected pteridophytes and woody plants while I gathered the others. This article is based on our common experiences and observations on May 30. I am much indebted to Mr. Schweinfurth for notes and suggestions in writing this.

The township consists of a somewhat detached group of the Taconic Mountains. The central plateau is about 1600 feet above sea-level, with higher points at the edges, especially the east, Mt. Everett reaching 2624 feet, and Mt. Race 2395 feet. The interior is drained by several brooks, which join Bash-Bish brook and flow westward into the Hudson. The general contours and elevation are strikingly similar to another Taconic section 150 miles further north, in Tinmouth, Vermont. The country rock is mica-schist, although casual plants of *Cystopteris bulbifera*, *Ranunculus allegheniensis*, *Viola rostrata* and *Senecio obovatus* indicate the presence of lime, perhaps in the glacial drift.

Starting from South Egremont we climbed 900 feet to the central

plateau by a sinuous and difficult road, with occasional glimpses of white birches and *Rhododendron canescens*, the latter in full bloom. In this high region we made our first collections — *Castanea dentata*, *Corylus rostrata*, *Quercus alba*, *Q. ilicifolia*, *Amelanchier canadensis*, *Prunus virginiana*, *P. serotina*, *P. pennsylvanica*, *Vaccinium vacillans*, *V. canadense*, *Kalmia latifolia*, *Lyonia ligustrina*, *Diervilla Lonicera*, *Smilax herbacea*, *Clintonia borealis*, *Geum rivale*, *Polygala paucifolia*, *Pedicularis canadensis*, and *Senecio aureus*, with other familiar plants, not very different from those seen in similar acid areas in the Fitchburg plateau region.

The next halt was by a school-house. Happy children, with woods and fields and a real brook to play in! In the brook grew *Stellaria borealis* Bigel., var. *isophylla* Fernald and *Geum virginianum*, with *Zizia aurea* close by, while in the light woods were *Uvularia perfoliata* and the inevitable *Aralia nudicaulis*. Around an old house-site were several introduced plants of which *Levisticum officinale* may deserve the honor of a record, along with an apparently transplanted native, *Viburnum Opulus*, var. *americanum*.

We now coasted rapidly into the Vale of Bash-Bish. Here were the rich woods we expected, with *Tsuga canadensis*, *Betula lutea* and *B. lenta*, *Fagus grandifolia*, *Ulmus fulva*, *Tilia americana* and *Acer saccharum*, together with the following shrubs: *Taxus canadensis*, *Hamamelis virginiana*, *Dirca palustris*, *Ribes Cynosbati*, *Acer pennsylvanicum*, *Lonicera canadensis*, *Viburnum alnifolium* and *Sambucus racemosa*.

There were dry woods, too, mainly oak with some chestnut and a few white pines. In the rocky woods above the falls *Quercus Prinus* was very abundant, with some specimens of *Fraxinus americana*. In this region were brilliant flowering clumps of *Silene pennsylvanica* in the driest places. *Quercus alba* and *Q. rubra* were further down the gorge. With these trees grew *Myrica asplenifolia*, *Rubus allegheniensis*, *Ceanothus americanus*, *Rhus typhina*, *Cornus florida*, *Vaccinium stamineum* and *Viburnum acerifolium*.

The greatest surprise of the day was the striking contrast between the northern sunny side of the gorge, and the shaded southern side.— To find *Oxalis americana* and *Acer spicatum* on one hand, and then only a few yards away *Gerardia virginiana* and *Scirpus planifolius* was indeed strange. The following lists of herbaceous plants emphasize the contrast further.

## RICH WOODS.

<i>Adiantum pedatum</i>	Ranunculus abortivus
<i>Aspidium marginale</i>	" " var. <i>encyclus</i>
" <i>noveboracense</i>	<i>Caulophyllum thalictroides</i>
" <i>spinulosum</i> , var.	<i>Dentaria diphylla</i>
<i>medium</i>	<i>Mitella diphylla</i>
<i>Phegopteris Dryopteris</i>	<i>Tiarella cordifolia</i>
" <i>polypodioides</i>	<i>Fragaria vesca</i> , var. <i>americana</i>
<i>Polystichum acrostichoides</i>	<i>Rubus odoratus</i>
<i>Botrychium virginianum</i>	<i>Amphicarpa monoica</i>
<i>Brachyelytrum erectum</i>	<i>Oxalis americana</i>
<i>Carex bromoides</i>	<i>Viola blanda</i>
" <i>gracillima</i>	" <i>canadensis</i>
" <i>laxiflora</i> , var. <i>blanda</i>	" <i>eriocarpa</i> Schwein.
" <i>leptonervia</i> Fernald	" <i>pubescens</i>
" <i>scabrata</i>	<i>Circaeа alpina</i>
<i>Luzula saltuensis</i>	<i>Sanicula marilandica</i>
<i>Maianthemum canadense</i>	<i>Osmorhiza Claytoni</i>
<i>Polygonatum biflorum</i>	<i>Trientalis americana</i>
<i>Smilacina racemosa</i>	<i>Hydrophyllum americanum</i>
<i>Trillium erectum</i>	<i>Collinsonia canadensis</i>
<i>Laportea canadensis</i>	<i>Mitchella repens</i>
<i>Asarum canadense</i>	<i>Aster acuminatus</i>
<i>Actaea alba</i>	" <i>divaricatus</i>
" <i>rubra</i>	<i>Erigeron philadelphicus</i>
<i>Ranunculus recurvatus</i>	<i>Solidago latifolia</i>

## DRY WOODS.

<i>Oryzopsis asperifolia</i>	<i>Saxifraga virginiensis</i>
<i>Carex communis</i>	<i>Hypericum punctatum</i>
" <i>digitalis</i>	<i>Lysimachia quadrifolia</i>
" <i>pedunculata</i>	<i>Satureja vulgaris</i>
" <i>pennsylvanica</i> , var. <i>lucorum</i>	<i>Gerardia virginica</i>
<i>Scirpus planifolius</i>	<i>Veronica officinalis</i>
<i>Silene pennsylvanica</i>	<i>Antennaria neodioica</i>
<i>Thalictrum dioicum</i>	" " var. <i>grandis</i>
<i>Hepatica americana</i>	<i>Solidago caesia</i>

The Bash-Bish Falls are most interesting. The brook descends through a narrow ravine for several hundred feet, then down through a deep gorge in the schist, then near the State Line falls in a beautiful cataract some forty feet. The region is picturesque and well worth a visit but automobilists should approach it warily, and from the splendid road on the New York side, for the State Line is guarded by

a monumental "thank-you-marm." Our springs apparently stood the test, only to disintegrate some days later in Vermont.

On dry ledges high above the falls grew *Woodsia ilvensis*; on shaded ledges the familiar *Polypodium vulgare*. Near the foot of the falls was one good plant of *Adlumia fungosa*, and a nice sod of *Sagina procumbens*, while *Campanula rotundifolia* was frequent in moist crevices. A single plant of *Arabis lyrata* nestled among the stones of the gorge wall, while in the sandy bank higher up grew *A. laevigata* and *Tussilago* still showing a few blooms. Along the stream were beds of *Tiarella*, with *Rhus Toxicodendron* and *Rubus triflorus*, and in the stream itself clumps of *Poa saltuensis* Fernald, *Carex torta*, *Cardamine pensylvanica*, *Chrysosplenium americanum* and *Steironema ciliatum*. We found one *Gentiana* but whether *G. Andrewsii* Griseb. or *G. clausa* Raf. did not yet appear.

The region comes within the New York floral area and has been visited by New York botanists as may be seen by articles relating to it.<sup>1</sup>

Some contributors to its literature have raised a troublesome question of synonymy by writing of Copake Falls, N. Y. when they mean Bash-Bish Falls, Mass. The lists of Mr. Stewart H. Burnham and Mr. Sereno Stetson are very interesting, as both are evidently keen collectors, and their visits took place earlier and later in the season than ours of May 30.

Plants on Mr. Burnham's list which we did not find are:

<i>Asplenium Trichomanes</i>	<i>Clematis verticillaris</i>
<i>Panicum latifolium</i>	<i>Pyrus Americana</i>
<i>Muhlenbergia tenuiflora</i>	<i>Rosa blanda</i>
<i>Hystrix patula</i>	<i>Desmodium bracteosum</i>
<i>Carex brunneocans Poir., var. gracilior Britton</i>	<i>Aralia hispida</i>
" <i>trisperma</i>	<i>Cornus circinata</i>
" <i>mirabilis</i>	<i>Asclepias phytolaccoides</i>
<i>Quercus coccinea</i>	<i>Pycnanthemum incanum</i>
<i>Cerastium nutans</i>	<i>Mentha gentilis</i>
	<i>Helianthus divaricatus</i>

Mr. Stetson viewed the general region as one geographic unit, paying very little attention to the State Line, so it is not possible to

<sup>1</sup> The Rare Mosses of Bash-Bish Falls. Elizabeth G. Britton, *Torreya I*, 9, 1901.

The Flora of Copake Falls, N. Y. Sereno Stetson, *Torreya XIII*, 121-133, 1913.

A Supplementary List of the Plants of Copake Falls, N. Y. Stewart H. Burnham, *Torreya XIII*, 217-19, 1913.

1913 notes on the Flora of Copake Falls, N. Y. Sereno Stetson, *Torreya XIV*, 42-45, 1914.

know absolutely which of his plants grew in Massachusetts. He explored the western slopes of the hills very thoroughly, and in many cases it would be hard to ascertain on just which side of the invisible line his specimens grew. The following are selected as perhaps within our limits.

<i>Juniperus virginiana</i>	<i>Monarda didyma</i>
<i>Corallorrhiza maculata</i>	“ <i>fistulosa</i>
“ <i>trifida</i>	<i>Gerardia flava</i>
<i>Cypripedium acaule</i>	<i>Veronica americana</i>
“ <i>parviflorum</i> , var. <i>pu-</i>	<i>Cuscuta Coryli</i>
<i>bescens</i>	<i>Orobanche uniflora</i>
<i>Habenaria hyperborea</i>	<i>Aster patens</i>
<i>Claytonia virginica</i>	“ <i>prenanthoides</i>
<i>Desmodium paniculatum</i>	<i>Eupatorium urticaefolium</i>
“ <i>nudiflorum</i>	<i>Solidago erecta</i>
<i>Lespedeza frutescens</i>	“ <i>hispida</i>
<i>Gentiana quinquefolia</i>	“ <i>squarrosa</i>

The neighboring region of New York furnished us several additional species. In dry woods just inside Copake, we found good specimens of *Polygala Senega*, while in a calcareous swamp near the State road just north of Copake village grew *Salix candida* and *S. serissima*, *Carex limosa* and *C. diandra* var. *ramosa*. These interesting plants do not appear on the New York lists.

This day of exploration brought us very little that was new, but the region proved most interesting from the large number of species and the unexpected contrasts. We secured so many plants not on the Copake lists that further explorations should bring out still other rarities, for the area is extensive, there being many ravines and slopes, with decided differences in altitude and in moisture content.

HINGHAM, MASSACHUSETTS.

## CHINESE MARINE ALGAE.

F. S. COLLINS.

THERE has recently been submitted to me by Mr. W. R. Maxon of the herbarium of the U. S. National Museum, a small collection of marine algae from China, gathered by Mrs. Spencer Lewis in the summer of 1915, at Pei Tai Ho, Gulf of Pechili, Chihli Province. The algae are mounted on small cards, and were apparently selected for their beauty and attractiveness, but the preparation was well and carefully done, and the plants are in excellent condition for examination. The following is the list, in systematic order and with the serial numbers corresponding to the specimens.

33. *Enteromorpha intestinalis* (L.) Grev.
35. *Enteromorpha prolifera* (Fl. Dan.) J. Ag.
34. *Enteromorpha plumosa* Kütz.
32. *Cladophora* sp.?
29. *Codium fragile* (Suringar) Hariot.
- 30, 31. *Bryopsis pennata* Lamour.
27. *Colpomenia sinuosa* (Roth) Derbès & Solier.
25. *Chordaria flagelliformis* (Fl. Dan.) Ag.
26. *Chordaria Cladosiphon* Kütz.
28. *Dictyota indica* Sonder.
8. *Goniotrichum elegans* (Chauvin) Le Jolis.
- 1, 52, 59. *Gelidium australe* J. Ag.
19. *Gracilaria multipartita* (Clementi) Harv.
20. *Gracilaria confervoides* (L.) Grev.
36. *Campylaephora hypneoides* J. Ag.
18. *Laurencia obtusa* (Huds.) Lamour.
- 4, 5. *Antithamnion cruciatum* (Ag.) Näg.
- 10–17. *Ceramium Boydenii* Gepp.
- 7, 24. *Ceramium japonicum* Okamura.
6. *Pleonosporium Borreri* var. *fasciculatum* (Harv.) Holmes & Batters.
- 8, 9. *Sympyocladia gracilis* (Martens) Falk.
- 22, 23. *Grateloupia affinis* (Harv.) Okamura.
- 37, 38. *Grateloupia filicina* (Wulf.) J. Ag.

39. *Grateloupia ramosissima* Okamura.
21. *Polysiphonia ferulacea* Suhr.
48. *Isoptera regularis* Okamura.
- 2, 3. *Dasya pedicellata* Ag.
- 41-47. *Corallina officinalis* L.
40. *Melobesia* sp.?
47. *Sargassum* sp.?

In all 27 determined specifically, 3 only as to genus. Not an extensive list, but 17 of the 27 are reported for the first time from China. If we except the genus *Sargassum*, for reasons to be stated later, only 28 can be safely retained from older lists, giving a total of 45. *Polysiphonia ferulacea* is epiphytic on *Gracilaria confervoides*, *Goniotrichum elegans* on *Sympyocladia gracilis* and *Colpomenia sinuosa* on *Gelidium australe*. The *Gelidium* is a quite slender and delicate appearing plant, but apparently not distinct from the coarser form of California and Australia. *Laurencia obtusa* is taken in a broad sense; in all probability several species now pass under that name, but we are not in a position clearly to distinguish them; *L. botryoides* and *L. thuyoides*, recorded on the Chinese coast, probably should be included in *L. obtusa*, in this sense. *Antithamnion cruciatum*, *Pleonosporium Borneri* var. *fasciculatum* and *Dasya pedicellata*, well known North Atlantic plants, now appear for what seems to be the first time in the Pacific. In each case the characters are quite those of the Atlantic plant.

Our previous knowledge of Chinese marine algae is very scanty. The first work of importance is that of Martens<sup>1</sup> in which are included previous records; unfortunately most of the older records are rather uncertain and cannot safely be compared with the present list. The next list is by Debeaux.<sup>2</sup> This includes 26 species from Chefoo and Hongkong. The author was not a specialist in algae, and most of his identifications were made by René Lenormand, and unless confirmed from other sources, cannot be safely accepted. More recently Mrs. Gepp has published a list<sup>3</sup> containing 22 named species, 2 of them with an "(?)" and 6 only generically determined, from Wei-hai-wei and Swatow.

<sup>1</sup> Georg v. Martens. Die Preussische Expedition nach Ost-Asien. Botanische Theil. Berlin, 1866.

<sup>2</sup> O. Debeaux. Algues marines recoltées en Chine pendant l'expédition française de 1860-62. Actes Soc. Linn. de Bordeaux, Vol. xxx, 1875.

<sup>3</sup> Ethel S. Gepp. Chinese marine algae. Jour. of Bot., Vol. XLII, p. 161, 1904.

A general list of the marine algae of China, to include all that seem sufficiently authenticated to the writer from these four sources, is quite meager for so long a coast, and especially in contrast with our knowledge of the flora of Japan. For the latter we have, in addition to a number of papers by European authors, many publications of recent years by Japanese phycologists, Yendo, Okamura, and others. The *Icones of Japanese Algae*, of which the fourth volume is now being issued by Okamura, is an illustrated work of the first rank, and is indispensable to any student of North Pacific algae. In this list, as given below, the important genus *Sargassum* is omitted; even more than with other genera it is impracticable to assimilate the different records. In Agardh's monograph<sup>1</sup> localities are given vaguely, as "Mari Japonico et Chinensi." Grunow's posthumous notes<sup>2</sup> would probably give the needed information, but having been issued during the late war, are not accessible in this country. Abbreviations used in the list for Chinese localities are, C, Cheefoo.<sup>3</sup> H, Hongkong. P, Pei-tai-ho. S, Swatow. W, Wei-hai-wei. To show relationships, a note on the further distribution of each species is added.

#### GENERAL LIST OF THE MARINE ALGAE OF CHINA.

<i>Rivularia atra</i> Roth. W.	General.
<i>Ulva Lactuca</i> L. C. S.	General.
<i>Enteromorpha intestinalis</i> (L.) Grev. C. P.	General.
<i>Enteromorpha prolifera</i> (Fl. Dan.) J. Ag. P.	N. Atlantic.
<i>Enteromorpha plumosa</i> Kütz. P.	N. Atlantic.
<i>Codium fragile</i> (Suringar) Hariot. C. P. W.	Pacific.
<i>Bryopsis pennata</i> Lamour. P.	Warm waters.
<i>Ectocarpus siliculosus</i> (Dillw.) Lyng. W.	General.
<i>Leathesia difformis</i> (L.) Aresch. C. S. W.	N. Atlantic.
<i>Colpomenia sinuosa</i> (Roth) Derbès & Solier. P.	Warm waters.
<i>Chordaria flagelliformis</i> (Fl. Dan.) Ag. C. P.	N. Atl. & Pac.
<i>Chordaria Cladosiphon</i> Kütz. P.	Australia.
<i>Chordaria firma</i> Gepp. W.	Endemic.

<sup>1</sup> J. G. Agardh. Species *Sargassorum Australiae*. Kgl. Svenska Vet.-Akad. Handl. Stockholm, Vol. XXIII, No. 3, 1889.

<sup>2</sup> A. Grunow. Additimenta ad cognitionem *Sargassi*. Verh. k.k. Zool.-Bot. Ges. Wien.

<sup>3</sup> The different forms used for the same Chinese name present some difficulty, but it is assumed that Cheefoo, Tschifu and Tché-fou, refer to the same place.

<i>Cystophyllum Thunbergii</i> (Mert.) J. Ag.	C. W.	Japan.
<i>Cystophyllum fusiforme</i> Harv.	W.	Japan.
<i>Cystophyllum Swartzii</i> (Ag.) J. Ag.	C.	Japan.
<i>Dictyota indica</i> Sonder.	P.	W. Indies.
<i>Dictyota dichotoma</i> (Huds.) Lamour.	W.	Warm waters.
<i>Goniotrichum elegans</i> (Chauv.) Le Jolis.	P.	General.
<i>Gelidium australe</i> J. Ag.	P.	Australia, Pac.
<i>Gymnogongrus japonicus</i> Suringar.	S.	Japan.
<i>Cystoclonium armatum</i> Harv.	W.	Japan.
<i>Gracilaria multipartita</i> (Clementi) Harv.	P.	General.
<i>Gracilaria confertoidea</i> (L.) Grev.	C. P. W.	General.
<i>Campylaephora hypnoides</i> J. Ag.	C. P.	Japan.
<i>Champia parrula</i> (Ag.) Harv.	W.	N. Atlantic.
<i>Acanthophora orientalis</i> J. Ag.	S.	Australia, Asia.
<i>Laurencia obtusa</i> (Huds.) Lamour.	C. P.	Warmer waters.
<i>Polysiphonia ferulacea</i> Suhr.	P.	Warmer waters.
<i>Polysiphonia japonica</i> Harv.	W.	Japan.
<i>Polysiphonia urecolata</i> (Lyng.) Grev.	(?) W.	N. Atl. & Pac.
<i>Rhodomela subfuscata</i> (Woodw.) Ag.	W.	N. Atlantic.
<i>Rytiphloca sinensis</i> Debeaux.	C.	Endemic.
<i>Sympyocladia gracilis</i> (Mart.) Falk.	C. P.	Japan.
<i>Dasya pedicellata</i> Ag.	P.	N. Atlantic.
<i>Isoptera regularis</i> Okamura.	P.	Japan.
<i>Lecillea bidentata</i> Martens.	C.	Endemic.
<i>Antithamnion cruciatum</i> (Ag.) Nág.	P.	N. Atlantic.
<i>Ceramium Boydenii</i> Gepp.	P. W.	Japan.
<i>Ceramium japonicum</i> Okamura.	P.	Japan.
<i>Pleonosporium Borreri</i> var. <i>fasciculatum</i> (Harv.) Holmes & Batters.	P.	Europe.
<i>Grateloupia affinis</i> (Harv.) Okamura.	P.	Japan.
<i>Grateloupia filicina</i> (Wulf.) J. Ag.	C. P. S.	Warmer waters.
<i>Grateloupia ramosissima</i> Okamura.	P.	Japan.
<i>Corallina officinalis</i> L.	C. P.	General.

## SPECIES RECORDED FROM CHINA BUT UNVERIFIED AND IMPROBABLE.

## REPORTED BY MARTENS.

*Ectocarpus littoralis.*  
*Haplosiphon filiformis.*  
*Spermatochnus australis.*  
*Laminaria saccharina.*  
*Haliseris polypodioides.*  
*Polysiphonia spinescens* var. *sinensis*.  
*Griffithsia corallina*  
*Gelidium cartilagineum.*  
*Lophura floccosa.*  
*Gastroclonium uvarium.*  
*Hypnea nigrescens.*

## REPORTED BY DEBEAUX.

*Padina Pavonia.*  
*Rytiphloea capensis.*  
*Champia Kotschyana.*  
*Gelidium cartilagineum.*  
*Gelidium corneum* var. *sericeum*.  
*Rhodymenia palmata* var. *sinensis*.  
*Dumontia filiformis* var. *tenuis*.  
*Bryopsis plumosa.*  
*Bryopsis arbuscula.*  
*Enteromorpha compressa.*  
 REPORTED BY GEPP.  
*Halosaccion microsporum.*

## NORTH EASTHAM, MASSACHUSETTS.

DICRANOWEISIA CRISPULA IN THE WHITE MOUNTAINS.—Lesquereux and James's Manual of the Mosses of North America (1884, p. 57) gives no record of this species from eastern North America. Mr. R. S. Williams in North American Flora (xv, 96, 1913) credits it to "Greenland; Labrador; Mt. Marcy, New York," leaving the impression that it does not occur in New England. It was found by Prof. A. W. Evans and the writer Aug. 3, 1917 by the Cold Brook of King's Ravine in the White Mountains of New Hampshire. Cold Brook emerges from the ice-filled talus of the head of King's Ravine a short distance above the little falls popularly known as Mossy Falls, and it was just below this place of emergence, between it and the falls that a vigorous fruiting tuft of the moss grew. Careful search of the northern part of the Presidential Range in the summers of 1917 and 1918, including a trip to the Ice Gulch further north in Randolph<sup>1</sup> failed to discover it elsewhere, and it is certainly not an abundant plant in the White Mountains. There is however one earlier specimen at present in the Herbarium of the New York Botanical Garden, of which Mrs. Britton has kindly sent me a portion. It was collected in August, 1889 in

<sup>1</sup> Though *Tetraphontium Brownianum* (Dicks.) Schwaegr. has long been known from the White Mts., in view of its limited number of New England stations it is perhaps worth recording that it occurs in the Ice Gulch. It was found in limited quantity on a few loose rocks in cold parts of the Gulch July 27, 1917, by Prof. Evans, Prof. A. S. Pease and the writer.

Tuckerman's Ravine by L. M. Underwood and correctly determined by him. Prof. L. W. Riddle has kindly looked through the Cryptogamic Herbarium of Harvard University, the Herbarium of the New England Botanical Club and the personal collection of the late Professor Farlow and reports no specimens from the White Mts., the only eastern ones being from Newfoundland (Waghorne) and the one from Mt. Katahdin, Maine collected by J. F. Collins July 8, 1900 and recorded in RHODORA, iii, 180, 182 (1901). The specimen from Mt. Marey, New York was collected by Mrs. E. G. Britton, Aug. 29, 1892.—  
A. LEROY ANDREWS, Ithaca, New York.

RANUNCULUS BORAEANUS IN EASTERN NEW YORK.—Very early in the spring of 1919, I noted, in a meadow numerous plants which had finely dissected leaves. As these leaves were unlike any I could recall, careful watch was kept of them. By the last of April the blossom-stalk proved the plant to be a *Ranunculus*. The first week in May the first blossom opened. The plant resembled *Ranunculus acris* L., but flowered earlier, was less stout, had finely dissected leaves, little pubescence, and that appressed, and a very short beak to the achene.

A specimen was sent to Harvard and pronounced to be *Ranunculus Boraeanus* Jordan, a species of continental Europe, the appearance of which has not before been noted in America. "It is considered by some authors as doubtfully distinct from *Ranunculus acris* L." but Professor Fernald, after giving the points of difference, notes: "Your point that with you it flowers so very much earlier than *Ranunculus acris* L. also seems to indicate that it is a fairly marked species."—  
ORRA PARKER PHELPS, Gansevoort, New York.



## DUPLICATE BOOKS FOR SALE.

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